

ASSESSING THE EFFICACY OF LEARNING COMMUNITIES  
AT FOUR NORTH TEXAS COMMUNITY COLLEGES

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This observational study involving intact groups and convenient sampling examined learning communities at four North Texas Community Colleges. The purpose of this study was to determine if there was a significant difference in cathectic learning climate, inimical ambiance, academic rigor, affiliation and structure among students in learning communities and freestanding classes. Learning communities are gaining nationwide popularity as instruments of reform in Higher Education. Recent studies have discussed the benefits of learning communities to student, faculty and institutions. As learning communities are gaining popularity, especially at the community college level, there is a need to determine if the learning communities are significantly different than freestanding classes. The College Classroom Environment Scales, developed by Winston, Vahala, Nichols, Gillis, Wintrow, and Rome (1989), was used as the survey instrument for this study. Using SPSS 10.1, a multivariate analysis of variance, (Hotelling's  $T^2$ ) was performed on five dependent variables: cathectic learning climate (CLC), inimical ambiance (IA), academic rigor (AR), affiliation (AF), and structure (ST), which yielded a significant difference. The independent variable was learning community compared to freestanding classes (group). Follow-up independent  $t$  tests were also conducted to evaluate the differences in the means between the two groups and to explore which dependent variables contributed to the multivariate difference, which

resulted in significant differences in inimal ambiance, affiliation and structure. The researcher concludes that learning communities make a difference for some learners, but not necessarily all and that more research needs to be conducted to find the answers to the questions concerning the efficacy and sustainability of learning communities in higher education.

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## CHAPTER 1

### INTRODUCTION

This chapter explains the need to examine the efficacy of learning communities at the community college level and briefly discusses their implementation as an answer to the call for reform in American higher education. The chapter also provides a brief theoretical framework for learning communities and presents the significance and purpose of this study. It also outlines the problem and presents the research hypotheses, which provide the thrust of this examination of learning communities.

#### The Need for the Study

The battlecry of the last few decades has been that public education needs reform. The higher education community has continued to stress the need for academic and curricular reform and increased student retention and achievement, along with a variety of related issues facing the future of higher education in the United States (e.g., Eaton, 1991; Griffith & Connor, 1994; MacGregor, Tinto, & Lindblad, 2000; Tussman, 1997). Researchers in higher education (e.g., Astin, 1993; Bloom, 1987; Boyer, 1987; Coles, 1993) have challenged the higher education community to reexamine their roles. Boyer (1987) emphasized the need for colleges to improve the following: transitioning students from high school to college, focusing on curriculum and goals of education, examining faculty priorities, examining the process of teaching and learning, assessing the quality of campus life, measuring learning outcomes, and helping students make connections between college and the world. Studies and reports conducted by numerous researchers



(e.g., Boyer Commission, 1998; Gamson & Chickering, 1987; Kellogg Commission, 1997; National Institute of Higher Education, 1984; Pace, 1990; Schneider & Shoenberg, 1998; Tinto, 1975, 1987, 1993) further highlighted the need for reform in higher education. Similarly, the Wingspread Group, a reputable study group on higher education, challenged the higher education community, urging it to answer the call to reform with these words:

A disturbing and dangerous mismatch exists between what American society needs of higher education and what it is receiving. Nowhere is the mismatch more dangerous than in the quality of undergraduate preparation. . . . What does our society need from higher education? It needs stronger, more vital forms of community. It needs an informed band of involved citizenry. It needs graduates able to assume leadership roles in American life. . . . Above all, it needs a commitment to the idea that all Americans have an opportunity to develop their talents to the fullest. Higher education is not meeting these imperatives. (as cited in Shapiro & Levine, 1999, p. 1)

In summary, higher education needs reform, particularly in the critical undergraduate years, where students tend to either "make or break" their college careers (Griffith & Connor, 1994).

One of the primary goals of the community college is to reestablish a sense of community among students (Griffith & Connor, 1994). In order to achieve this goal, traditional barriers between faculty and students need to break down; in turn, the faculty and administration must become directly involved with the students and encourage their

participation in the community of learning (e.g., Bruffee, 1993; Griffith & Connor, 1994; Kellogg Commission, 1997; Smith, 2001; Szelenyi, 2001; Tinto, Goodsell-Love, & Russo, 1993; Tinto & Russo, 1993a). The primary responsibility of the community college faculty is teaching, and "community college teachers are in an ongoing struggle to find more and better ways to let students integrate what they bring from their lives with what their classrooms have to offer" (Griffith & Connor, 1994, p. 48).

In response to this critical need for reform, particularly at the undergraduate level, community colleges have assumed the role as agents of change. Because they welcome an increasingly diverse student population, these institutions have been called "open door colleges" or "democracy's colleges" (Griffith & Connor, 1994, p. xi). Community colleges allow adults from different educational, cultural, and financial backgrounds an opportunity to enter the world of higher education at a lower cost than most other public institutions by concentrating "on the neglected first two years of college" (Griffith & Connor, 1994, p. xii). However, like most institutions of higher learning, community colleges are also experiencing difficulties in a variety of ways.

Despite the efforts of community colleges to provide education for an increasingly diverse student body, some institutions lack the necessary support to sustain their goals (Shapiro & Levine, 1999). Along with many other institutions of higher learning, community colleges face many challenges in student recruitment and retention while operating under severe budget constraints (Gabelnick, MacGregor, Matthews, & Smith, 1990). Educators such as Griffith and Connor (1994) have expressed their

concern that the egalitarian vision of these colleges may suffer with increasing budget cutbacks and the need for reform.

In the past 2 decades, community colleges have further realized the progressive decline in the quality of undergraduate education and the halted development of a sense of community on what are increasingly becoming commuter campuses (Griffith & Connor, 1994). These institutions are faced with evolving to meet the changing nature of the college experience, marked by changing technology and the changing nature of the college student population; in turn, they are responding to the need for reform "by restructuring, reorganizing, and reengineering" (Shapiro & Levine, 1999). Community colleges, like many other institutions of higher learning, are revisiting their mission statements (Smith & Jones, 1984). Many institutions are also examining their strategic planning in terms of the "bottom line," utilizing the language and practices of the business community to increase their effectiveness (Shapiro & Levine, 1999, p. 2). The need to reexamine goals is expressed in the following:

Faced with a chronic shortage of funds, public demand for greater accountability, soaring fees, and hard questions concerning faculty research and workloads, student retention, and learning outcomes, colleges and universities must reevaluate not only their educational goals, but also how to reach these goals. Innovative curriculum structures are part of this answer. (Chesebro, Green, Mino, Snider, & Venable, 1999, p. 2)

An increasing number of community college campuses have responded to the need for reform by establishing learning communities in a variety of curricular structures

(e.g., Eby, 2001; Gabelnick et al. 1990; Gamson, 2000; Goodsell-Love, Russo, & Tinto, 1994; Goodsell-Love & Tinto, 1994; Smith, 2001). In 1984, The National Institute of Education urged all institutions of higher learning to “create learning communities organized around specific intellectual themes or tasks” (as cited in Gabelnick et al., 1990, p. 5). The definition of a learning community is broad, ranging from a way of linking students and faculty through the Internet to linking people from different countries. This study was limited to learning communities at the undergraduate level, specifically at the community college level, which are the first 2 years of college study. For the purpose of this study, a learning community is defined as follows:

One of a variety of curricular structures that link together several existing courses--or actually restructure the material entirely--so that students have opportunities for deeper understanding and integration of the material they are learning and more interaction with one another and their teachers as fellow participants in the learning enterprise. (Gabelnick et al., 1990, p. 19)

Learning communities offer change in course structure, placing classes that are traditionally taught separately into "larger, more coherent programs of study" (MacGregor, Tinto, & Lindblad, 2000, p. 42). These undergraduate curriculum reform initiatives vary from loosely connected course clusters, to linked classes, all the way to more highly integrated team-taught and interdisciplinary courses (Gabelnick et al., 1990). Through their variety of structures, ranging from simple linked courses to more complex and fully integrated programs, learning communities offer colleges a range of styles and flexibility to address both organizational and student needs (Smith, 2001). They also

accommodate the changing nature of students, provide a sense of community and offer innovative approaches to teaching and learning, particularly collaborative learning, an instructional method in which students work together toward academic goals and are responsible for each other's learning (Shapiro & Levine, 1999). Moreover, they promote deeper intellectual interaction by creating a deeper sense of connection between subject matter and ideas and by aiming at higher levels of student engagement (MacGregor et al., 2000).

Learning communities also provide a sense of curricular connection by placing required freshman and sophomore-level core courses, such as English, history, government, sociology, and psychology, which are normally taught separately, into more coherent integrated programs (Gabelnick et al., 1990). Although this concept of linkages is not a new idea, learning communities have gained nationwide interest, particularly in the last 15 years (e.g., Gabelnick et al., 1990; Krovetz, 1993; Matthews, 1986; National Institute of Education, 1984; Shapiro & Levine, 1999; Smith, 2001; Tinto, Goodsell-Love, & Russo, 1993, 1994).

The growing nationwide movement toward the development of learning communities has been deeply influenced by the Washington Center for Improving the Quality of Education (Minkler, 2000). This center was established in 1985 at Evergreen State College in Olympia and supported by several grants from the Ford and Exxon Foundations (MacGregor, 1999). Interest in the center's activities grew so rapidly that it requested and received a federal grant from the Fund for the Improvement of Post-Secondary Education (FIPSE) (MacGregor, 1999).

This funding also helped to create The National Learning Communities Dissemination Project, which involved 20 nationwide institutions from 1996-1999, ranging from Florida to Hawaii, enabling these institutions to learn how to design, develop, assess, and sustain learning communities (MacGregor, 1999). This project continues to grow as more institutions are recognizing the value of learning communities and are reevaluating their own curriculums in response to the need for reform (Shapiro & Levine, 1999).

As evidenced by financial support and the proliferation of learning communities in diverse institutions across the United States, the learning community movement is gaining interest in higher education (e.g., Esperian, Hill, & MacGregor, 1986; Masterson, 1998; Matthews, 1986; Shapiro & Levine, 1999; Smith, 2001). According to Smith (2001), 400 to 500 private and public colleges offer them in almost every state, and their numbers continue to rise as more administrators, faculty members, and instructors attend numerous nationwide conferences fostering the growth of learning communities from their inception to their assessment. Structurally innovative and flexible, learning communities "address a variety of issues from student retention to curriculum coherence, from faculty vitality to building a greater sense of community within our colleges" (Smith, 2001, p. 1).

### The Significance of the Study

Like all businesses, higher education exists within a market. As students continue to pay more for their education, they increasingly behave like consumers (Miller, 1998). In order to stay competitive and to attract and retain students, colleges are

reevaluating their curriculum and establishing learning communities to improve student outcomes and increase institutional effectiveness (e.g., Gabelnick et al., 1990; Shapiro & Levine, 1999).

As community colleges are considering implementing more learning community programs into their curricula, ranging from the simple structure of team-taught courses to more complex models, such as Freshman Interest Groups (FIGs), it is becoming increasingly important to examine how they affect student learning. Despite these promising indications, further evaluation studies, such as this study, are needed to determine the extent to which learning communities independently enhance student learning and to learn how this is done (Tinto, Goodsell-Love, & Russo, 1993).

Researchers (e.g., Borden & Rooney, 1998; Gabelnick et al., 1990; MacGregor et al., 2000; Moore & Kerlin, 1994; Mullen, 2001; Scholnick, 1996; Shapiro & Levine, 1990; Smith, 2001) have stressed the need for more learning community assessments and have recognized the paucity of existing data. Moreover, the data from this study will add to the limited body of learning community literature and will benefit the stakeholders, the students, the faculty and administration, of the Dallas County Community College District (DCCCD), the Collin County Community College District (CCCCD), and other institutions of higher education interested in developing learning communities to enhance curricula and make informed choices based on actual data. This study is particularly important for the DCCCD and will serve as a starting point for assessing learning communities in the district.

The overall need for this study is clearly stated by Shapiro and Levine (1999): “Evidence of the impact of learning communities needs to be shared with faculty, students, administrators, and staff so they can recognize not only potential benefits but also barriers and obstacles to success” (p. 187).

### Theoretical Framework

Although learning communities encompass the learning theories of Barr and Tagg (1995), Bruffee (1995) and Johnson, Johnson, and Holubec (1994), as later discussed in the literature review, they are grounded in the educational philosophy of Dewey (1938), who has been called “a father” of both learning community work and active, student-centered learning (Gabelnick et al., 1990, pp. 15-16). Dewey noted the difference between traditional and progressive education and referred to traditional education as “formation from without” and progressive education as “development from within,” which was his primary concern (Dewey, 1938, p. 17). Dewey also maintained that learning emerged from meaningful experiences, where students join together in a social context, such as a classroom, to manipulate materials and ideas; learning is a "social enterprise," and students "learn by doing" (p. 116). He stressed the need for more purposeful education in which students could see more relevance in their learning and make connections between ideas. He posited that the interaction between the student and teacher was critical to the learning process and that education should focus on the process of inquiry rather than just relaying information from teacher to student, a relay which Freire later called the “banking” notion of education in which teachers deposit knowledge to students, and little attention is paid to individuality (as cited in Minkler, 2000, p.19).



## The Purpose of the Study

The purpose of this study was to determine whether there was a significant difference in cathectic learning climate, inimical ambiance, academic rigor, affiliation and structure, as measured by the College Classroom Environment Scales (CCES), among students in learning communities and freestanding classes (see Appendix B). Winston, Vahala, Nichols, Gillis, Wintrow, and Rome (1994) define the scales as follows:

Cathectic Learning Environment (CLC): Describes an environment that students perceive as a charged academic atmosphere that stimulates students to be active participants in the class and to seek classmates' opinions and reactions.

Inimical Ambiance (IA): Describes an environment that students perceive as hostile, highly competitive, rigidly structured and one in which they are uncomfortable asking questions or giving opinions.

Academic Rigor (AR): Describes an environment that students perceive as intellectually challenging and demanding.

Affiliation (AF): Describes an environment that students perceive as having more informal interactions with each other within a supportive and friendly atmosphere.

Structure (ST): Describes an environment that students perceive as having clearly articulated and followed evaluation criteria and syllabi.

## Statement of the Problem

A paucity of data exists in learning community research. As learning communities are gaining popularity, especially at the community college level, there is a need to determine whether learning communities are significantly different from

freestanding classes in cathectic learning climate, inimical ambiance, academic rigor, affiliation, and structure. The question becomes one of sustainability: Are learning communities just another fad in education, or are they a viable agent of change in an era of educational reform? (e.g., Guskin, 1996, 2000; Smith, 2001).

### Research Hypotheses

H<sub>1</sub>: There is no significant difference in cathectic learning scores, as measured by the CCES, among students in learning communities and students in freestanding classes.

H<sub>2</sub>: There is no significant difference in inimical ambiance, as measured by the CCES, among students in learning communities and students in freestanding classes.

H<sub>3</sub>: There is no significant difference in academic rigor, as measured by the CCES, among students in learning communities and students in freestanding classes.

H<sub>4</sub>: There is no significant difference in affiliation, as measured by the CCES, among students in learning communities and students in freestanding classes.

H<sub>5</sub>: There is no significant difference in structure, as measured by the CCES, among students in learning communities and students in freestanding classes.

### Limitations

Because the study was limited to two community colleges in North Texas, the ability to generalize the findings may be limited to this area. The students varied in prior knowledge, skills, and attitudes and in their experience with collaborative learning. They also varied in level of education, life experience, motivation, and socioeconomic status. Similarly, the instructors varied in their level of experience in team-teaching and their training to teach learning communities. The amount of administrative support involved

in this study also varied between the CCCCD and the DCCCD, as did the actual campuses themselves in terms of student, instructors, and overall campus climate. The number of students enrolled in the learning community and freestanding classes was not equal. Neither entry-level skills, such as high school grade point averages, nor factors contributing to a student dropping a course were examined.

#### Delimitations

The study was limited to intact groups, comprised of students enrolled in learning communities and freestanding classes at Central Park Campus, Preston Ridge Campus and Spring Creek Campus of the Collin County Community College District (CCCCD); and Richland College (RLC), the largest campus of the Dallas County Community College District (DCCCD).

#### Assumptions

This study operated under the assumption that the students surveyed could read and comprehend the survey questions and answer them as honestly and accurately as possible.

#### Summary

Chapter 2 provides a historical overview of learning communities, a theoretical framework for their foundation, and an examination of the related literature. This study has compared learning communities and freestanding classes using a survey instrument.

## CHAPTER 2

### LITERATURE REVIEW

This chapter provides a brief overview of the development of learning communities as a national reform effort in American higher education. It addresses the changing nature of students and the paradigm shift from teaching to learning, with a focus on cooperative and collaborative learning. Although a limited amount of quantitative data exists in the study of learning communities, this literature review examines some of the research alluding to cathectic learning climate, inimical ambiance, academic rigor, affiliation, and structure. This chapter does not address faculty concerns or psychological factors that affect student performance (e.g., prior learning, experience, motivation, socioeconomic factors).

#### The Development of Learning Communities

Although the learning community effort has been gaining momentum in the last 2 decades, its roots reach back to the progressive era of the 1920s when Alexander Meiklejohn, a philosopher at the University of Wisconsin, observed that the scope of education was narrowing and focusing on specialization as opposed to broadening its range (Cronon & Jenkins, 1994). He embraced the concept of learning for the benefit of the community and not just for the individual in isolation. Because of his early attempt at forming communities of learning, Meiklejohn is known as the father of the learning community movement (Gabelnick et al., 1990).

Concerned with increasing specialization and fragmentation in American colleges and universities, Meiklejohn stressed the need for reform and argued that education is inextricably linked with democracy (Smith, 2001). He considered college a significant place for learning and preparing students to function as responsible citizens in a democracy and viewed the core college curriculum as a vehicle for students to acquire and share this valuable information (Powell, 1981). Consequently, Meiklejohn discarded the traditional curriculum and designed an innovative 2-year program called the "Experimental College," in which students intensely discussed the meaning of democracy in terms of the classical literary texts they examined. This experiment led to the first learning community, which was founded on the examination of democracy in ancient Greece and made connections between the classics and modern America (Powell, 1981). Rejecting the existing elective system, which allowed students to choose their own course of study, Meiklejohn (1932) implemented a study of the "Great Books," a variety of enduring classical texts, which allowed for a more holistic approach to learning, facilitating open discussions and student-centered learning. In this approach, students were required to make connections between classroom learning and "real life" (Gabelnick et al., 1990).

Even though Meiklejohn's (1932) experiment was short-lived, it sparked the interest of other scholars. Tussman's (1969) experiment at Berkeley "made the establishment of learning communities a reality" as he implemented the theories of Meiklejohn and Dewey, calling for reform in higher education and expressing the need for students to make connections in their learning (Minkler, 2000, p. 3). Tussman

believed that a new way of thinking was needed to resolve the problems of the modern American university concerning its role in student development. In response to the need for reform, Tussman abolished individual courses as basic curricular units and replaced them with what he considered a more coherent program. Tussman criticized the individual course, which he considered a competitive structure that “forces teaching into small, relatively self-contained units” and discussed its negative impact on the student:

The student presents himself to the teacher in fragments, and not even the advising system can put him back together again. . . . Horizontal competitiveness and fragmentation of student attention are limiting conditions of which every sensitive teacher is bitterly aware. But there is nothing he can do about it. He can develop a coherent course, but a collection of coherent courses may simply be an incoherent collection. For the student, to pursue one thread is to drop another. He seldom experiences the delight of sustained conversations. He lives the life of a distracted intellectual juggler. (pp. 6-7)

Tussman’s restructuring of the curriculum required the creation of community among faculty as the courses were taught in teams, thus liberating the planning process and allowing for more creativity and innovation in curriculum development (Gabelnick et al., 1990).

These experiments by Meiklejohn (1932) and Tussman (1969) culminated in the formation of The Evergreen State College (Jones, 1981). This state-supported “alternative college” was comprised of year-long learning communities, called “coordinated studies,” that would be team-taught and centered on interdisciplinary

themes (Gabelnick et al., 1990, p. 14). With the implementation of The Washington Center for Improving the Quality of Education at the college in 1985, Evergreen continues to influence the creation and adaptations of learning communities nationwide (MacGregor, 1987).

### The Impact of Learning Communities as a Nationwide Movement

Characterized by collaborative leadership models, learning communities have sprung from a variety of sources, including the feminist and civil rights movements and the reform efforts of the 1960s and 1970s (Smith, 2001). As a result of this increased interest, a formal project was established to promote their development and implementation in institutions of higher education throughout the United States. The National Learning Communities Dissemination Project, the most comprehensive research conducted on learning communities to this date, lasted from 1996 to 1999 and involved 21 institutions at 30 different campuses across the United States (MacGregor, 1999). The project was directed by the Washington Center and funded by the U.S. Department of Education's Fund for the Improvement of Post-Secondary Education (FIPSE). The following seven community colleges were among 19 that published the results of the study: Collin County Community College, De Anza College, Delta College, Holyoke Community College, Maricopa and Metropolitan Community Colleges, and William Rainey Harper College (Minkler, 2000). MacGregor (1999) made the following observation of the colleges that were involved in this project:

From the beginning, many of these schools accepted our invitation to bring

someone interested in assessment onto their planning teams. They also sought to use traditional quantitative measures, such as student retention and academic achievement, and some not so traditional qualitative measures as well. These include student satisfaction and a sense of “connectedness” to provide guidance as the learning community developed. (p. 201)

The results of this study, with the exception of those from Delta College, indicated that student achievement was higher among students who participated in the learning communities as compared to those in freestanding classes; the students who participated in this study also expressed satisfaction with the positive learning climate and intellectual challenges that this type of unique classroom setting provides (Minkler, 2000). Similarly, Chesebro et al. (1999) emphasized that students who have participated in learning communities “have experienced greater academic successes than did similar students who enroll in traditional classes” (p. 1).

As evidenced by the growing numbers of learning communities on college campuses throughout the United States and an increasing number of conferences focused on implementing and sustaining learning communities, interest is growing (e.g., Eby, 2001; Masterson, 1998; Shapiro & Levine, 1999; Smith, 2001). Over 600 faculty and administrators attended a Miami conference on learning communities in 1997, seeking solutions to institutional problems (Masterson, 1998). MacGregor (personal communication, April 6, 2002) stated that some form of learning communities exists in over 400 institutions of higher learning throughout the United States, and nearly as many



institutions are expressing interest in developing, implementing, and sustaining learning communities to meet the changing needs of an increasingly diverse student body.

### The Changing Nature of Students

The demographics of higher education is changing from the traditional, full-time student, who enters college after high school, lives on campus, and participates in a variety of communal campus activities to rising numbers of non-traditional, commuter students (A. Levine, 1998). Almost half of all college students are over 25 years old, and the average age is 29 (Szelenyi, 2001). Approximately one third of high school graduates enter a 4-year institution immediately after graduation, and women comprise over 50% of the 12 million students enrolled in undergraduate education (Griffith & Connor, 1994).

Indeed, the student body is becoming increasingly diverse, with more adults, females, and commuters entering higher education (Gabelnick et al., 1990). As a result of this influx of nontraditional students, the population of commuter students is rising as the enrollment of students in higher education continues to increase (Griffith & Connor, 1994; Jacoby, 1989). Commuter students are defined as "students who do not live in institution-owned housing" (Jacoby, 1989, p. 1). Commuter student populations are diverse, comprised of both full- and part-time students of various age groups and living situations; some live at home with their parents, while others work full-time and support families (Gabelnick et al., 1990). Regardless of their situation, commuter students are entering higher education at increasing rates and are a dominant concern for community colleges, whose mission is to cater to their educational needs (Griffith & Connor, 1994).

In response to this need, learning communities offer a proverbial “breath of fresh air” to stale college environments that have not seemed to keep up with such tremendous change in student body composition. “Communities depend on this diverse group of individuals coming together for the overriding purpose of the college experience: educating the same students together” (Gabelnick et al., 1990, p. 91). With the collective efforts of students, faculty, and administrative support, learning communities can provide revitalization of the learning process, providing new grounds for discussion and promoting “deeper learning” (MacGregor et al., 2000, p. 43).

#### The Paradigm Shift From Teaching to Learning and Inimical Ambiance

Changing demographics are paralleled by a transformation in the way colleges view the teaching and learning process, moving away from a sense of competition to a sense of community (e.g., Brown, 2001; Gabelnick et al., 1990; Shapiro & Levine, 1999). Deming (1993) discussed the concept of competition as part of the American way of life, suggesting that all should work together for the common good and that everyone gains from cooperation. In keeping with this suggestion, Bruffee (1995) related that knowledge is best gained through sharing and collaboration as opposed to competition, where someone wins and someone has to lose. Likewise, educational theorists and political scientists (e.g., Barber, 1992; Bruffee, 1995; Dewey, 1916; Griffith & Connor, 1994; Guarasci & Cornwell; Meiklejohn, 1932; Oates & O’Connor, 2001) have maintained that democratic education, a system which is aimed at teaching democratic ideals of equality, is a worthy educational goal.

Gill (1993), who taught philosophy at both community and 4-year colleges, has maintained that the teaching that often occurs in higher education causes students to be “systematically excluded from interacting with the subject matter, each other, and the professor” (p. 71). Like Dewey, Gill argued that learners should not be ignored and that their voices should be heard in interactions with their peers and their instructors. Gill also argued that competitively pitting students against each other is antithetical to the learning process and that treating students in an “impersonal and dehumanizing fashion” only exacerbates the problem (p. 95). Gill compared learning to an interactive dance and concluded that the aim of education should be to “create an atmosphere which causes students to look forward to class, to feel respected and needed in the pursuit of knowledge, and to respect and rely upon each other in these endeavors” (p. 148). However, MacGregor (1990) noted that such changes are “shaped, over time, by successive conversations, and by ever-changing social and political environments (p. 23).

In keeping with Gill (1993) and MacGregor’s (1990) assertions that knowledge is socially constructed, Barr and Tagg (1995) discussed the paradigm shift from teaching to learning in undergraduate education, a shift from a teacher-centered to a learner-centered environment. Noting that the primary mission of the college is to teach students and produce learning, Barr and Tagg related that the college assumes responsibility for learning at both the student level and the organizational level. By shifting institutional outcomes from teaching to learning, the learning paradigm facilitates continual improvement, production, and efficiency (Barr & Tagg, 1995). In this assumption, Barr and Tagg echoed Senge’s (1990) pivotal work, *The Fifth Discipline*, in which he applied

systems theory to organizational learning, noting that institutions fail to analyze systematic structures in an effort to improve organizational performance. Indeed, colleges are learning organizations, and like businesses, they too need restructuring, reengineering, and even reinvention in order to improve and increase output, which is, in this case, student learning (Barr & Tagg, 1995). Similarly, Guskin (1996) commented on the inadequacy of the traditional college format, which is driven by passive lecture-discussion, and stated that this traditional methodology contradicts optimal settings for students learning.

With this paradigm shift from teaching to learning, faculty are discovering and applying new teaching methodologies to bring students and faculty closer together to achieve greater learning outcomes and build a community of learners. This “rediscovering” of learning has been called *cooperative learning* by some, and *collaborative learning* by others (Bruffee, 1995). Cooperative learning takes place when peers take responsibility for each other’s learning; similarly, when collaborative learning takes place, students learn to value each other as resources (Bruffee, 1995). Learning communities have become an important vehicle for these potent learning strategies; they are “a natural derivative of collaborative learning” because they function as “the delivery system and a facilitating structure for the practice of collaborative learning” (MacGregor & Smith, 1993, p. 8). Advocates of learning communities also have asserted that the open and active exchange of ideas between students in a collaborative environment stimulates interest and promotes critical thinking (e.g., J. R. Davis, 1995; Gabelnick et al., 1990; Gokhale, 1995; MacGregor, 1987; Shapiro & Levine, 1999). Johnson and

Johnson (1986) also maintained that students who work in cooperative teams achieve higher levels of critical thinking and retain information longer than students who work independently. Because collaboration is such a crucial part of learning communities, The Washington Center for Improving the Quality of Undergraduate Education (1994) even compiled its own casebook of strategies for collaborative teaching and learning.

Educational research further emphasizes a growing need for collaborative work that fosters collaboration rather than competition (Bruffee, 1995; Felder & Brent, 1996; Johnson, Johnson & Smith, 1991; Rau & Heyl, 1990; Slavin, 1989; Weimer, 1994). Johnson et al. (1991) confirmed the effectiveness of cooperative and collaborative learning as an instructional strategy in the following: “During the past 90 years, over 575 experimental and 100 correlational studies have been conducted by a wide variety of researchers” in different subjects, area, and settings (p. 2). As reported by Phipps, Phipps, Kask and Higgins (2001), the results of these numerous studies “indicate that cooperative learning will promote higher achievement, more positive interpersonal relationships, and higher self-esteem than will competitive or individualistic efforts” (p. 14). Similarly, Felder and Brent (1996) stated that cooperative and collaborative learning enhances student motivation, learning retention, depth of comprehension, and an appreciation of the subject matter. Research also indicates that effective cooperative learning can increase critical thinking, achievement, retention, and interpersonal relationships among students and faculty, thus promoting a more positive attitude toward learning and improving overall psychological health (Phipps et al., 2001; Tinto, 1993; Weimer, 1994). When combined with effective curricular structures, cooperative and

collaborative learning strategies can be a powerful force in the classroom (e.g., Finkel, 2000; Gabelnick et al., 1990; MacGregor et al., 2000; Palmer, 1999; Shapiro & Levine, 1999).

### Affiliation and Structure in Learning Communities

A sense of affiliation and belonging is one of the most critical conditions that can be created in the classroom (e.g., Astin, 1993; Finkel, 2000; MacGregor, Cooper, Smith, & Robinson, 2000; Palmer, 1999; Shepard, 1996; Stevens, 1998; Tinto, 1993). Being a part of a group increases social interaction as well as personal and academic growth. (MacGregor et al., 2000). An effective way to build a supportive community on a college campus is through learning communities (e.g., MacGregor, 1991; Shapiro & Levine, 1999; Smith, 2001). Research indicates that students feel more comfortable interacting in a learning community and more supported by their peers than in freestanding classrooms (Gabelnick et al., 1990; Shapiro & Levine, 1999; Tinto et al., 1993).

Students in learning communities have "reported greater involvement in a range of academic and social activities and greater developmental gains over the course of a year than students learning in the regular curriculum" (Tinto et al., 1993, p. 27).

Similarly, when students at the University of Miami were asked to explain why they enrolled in learning communities, they cited "intellectual, social, and logistical reasons" (Shapiro & Levine, 1999, p. 178). In focus group interviews at Temple University, students responded similarly to the same question, reporting that they sought a sense of support from faculty and peers to facilitate an easier transition into university life (Shapiro & Levine, 1999).

Through higher education, students also develop a sense of themselves and a life philosophy, which is enhanced by exposure to a socially-oriented college atmosphere that promotes concern for others and an overall sense of community (Astin, 1993). This sense of community, created within the college environment, provides an extension of the concept of self, involving a student's integration into the college community, which is comprised of diverse groups of people; in turn, this integration of academic and social life provides students and faculty with a deeper sense of community (MacGregor et al., 2000). Through this integration, students experience the benefits of learning in a diverse environment. "In learning communities, students learn to interact with people of different races, sizes, colors, etc," and, as a result, they "learn more, they learn better" (MacGregor et al., 2000, p. 47).

In order to help students gain a greater sense of self and community, institutions are creating learning communities, which encourage students to explore new social and intellectual terrain and to participate with comfort and confidence (T. M. Davis & Murrell, 1994). Astin (1993) commented on the inherent "goodness" in creating a sense of community for students:

If we create opportunities for students to interact and learn together in an academic environment, some good things will happen. Give these young people a good deal of freedom coupled with some new challenges and new responsibilities, and some good things will happen. While it is not always possible to know beforehand just what these good things will be, the students seldom disappoint us. (p. 2)

Like students, instructors also report a greater sense of affiliation in a more collaborative and less rigidly structured classroom environment (MacGregor et al., 2000). A biology professor at The University of Delaware commented on the joy of having a more flexible classroom structure:

I prepare well for each class--script it out as much as I would prepare for facilitating a teaching workshop for faculty-- but like never being quite sure what will actually happen in the classroom. Students often turn my plans upside down, and it usually works out for the better. I like the fact that students are continually learning more about the problems I've written. I can incorporate a whole new set of goals for student learning that would not have been realistic for the way I was doing things before. The classroom is a much more relaxed and user-friendly one from my perspective as well as that of the students. I prefer the role of experienced scholar in a community of scholars much more than that of the keeper of the right answer. I'd never go back to using a traditional format. (as cited in MacGregor, Cooper, Smith, & Robinson, 2000, p. 39)

This instructor echoes other learning community instructors, who have reported that students engage in deeper learning when they feel free to explore and express ideas more openly (e.g., MacGregor et al., 2000; Shapiro & Levine, 1999; Smith, 2001; Smith & Hunter, 1988). In addition to structuring the learning environment and posing problems for examination, the instructor becomes a facilitator or coach, as opposed to a "sage on stage," one who strictly adheres to the traditional lecture format (MacGregor et al., 2000).



## Cathetic Learning and Academic Rigor in Learning Communities

Along with promoting a sense of affiliation, learning communities encourage active engagement in learning and are rooted in the fundamental goal of fostering intellectual development through critical thinking and analysis, both on individual and group levels (Gabelnick et al., 1990). The first catalogue at Evergreen State College outlined these goals as revealed in the following statement: “Instead of listening passively to lectures most of the time, you will be responsible for engaging in regular discussion” (as cited in Kliwer, 1999, p. 186). According to the research collected by The Washington Center (1994), learning communities offer a greater intellectual challenge than freestanding classes; compared to other students, “learning community students’ learning goes deeper, is more integrated, and is more complex” (MacGregor et al., 2000, p. 43). Measuring this “deeper learning” has posed many challenges for learning community researchers (e.g., Smith, 2001; Shapiro & Levine, 1999; MacGregor, 1987).

Perry’s (1981) work on the nature of students’ cognitive and intellectual growth has sparked the interest of learning community researchers (e.g., Avens & Zelley, 1992; MacGregor, 1987; Shapiro & Levine, 1999). Perry, the director of the counseling center at Harvard, and his colleagues were interested in examining the development of young adults regarding learning and socialization in the academic community. Through a series of long, open-ended interviews and resulting analysis, a pattern emerged among the students, ranging “from a rather simplistic and authority-dependent view of the world and

knowledge to a much more complex and conceptually relativistic one” (MacGregor, 1987, p. 3).

In a similar effort to measure whether learning communities make a difference in students’ intellectual and social development, researchers have asked how participation, collaboration, and more integrated ways of learning have affected student learning (Shapiro & Levine, 1999). MacGregor (1987) used the Measure for Intellectual Development (MID), developed by Knefelkamp and Widick, to assess student placement along the Perry Scheme of Intellectual and Ethical Development. This benchmark study was the first exploratory effort to measure the intellectual development of students enrolled in freshman-level learning communities in 2- and 4-year institutions in the state of Washington from 1986-1987 (MacGregor, 1987). At the beginning of the semester, students were asked to write a “pre” essay, describing the last time they made an important decision or the best class they had ever taken in high school or college; in turn, the students were required to write a “post” essay describing a class that would represent their ideal learning environment (Shapiro & Levine, 1999). This study revealed that students often chose learning communities over freestanding classes because they sought challenging, collaborative environments that promoted the building of curricular connections and found that 57 to 73 % of learning community students advanced a third or more in their intellectual development (MacGregor, 1987). Despite the promising results, this study raised some questions concerning the potential bias of the essay questions and the problem of self-selection of students into learning community classes (MacGregor, 1987).

In a similar study conducted by Daytona Beach Community College, researchers used the MID to examine the hypothesis that “participation in this collaborative active learning environment will result in greater movement along the Perry Scale of Intellectual Development than is usual in traditional classes” (Avens & Zelle, 1992, p. 9). During the course of an academic year, the students wrote three essays in response to questions concerning career plans, classroom learning, or decision making (Shapiro & Levine, 1999). When the essays were compared, “seventy-six percent of the students experienced a change of one-third position or more, 50 percent progressed a position of two-thirds, and 10.5 percent made a positive movement of a full position or more” (Shapiro & Levine, 1999, p.174). Compared to the national norms, these students displayed a greater movement along the Perry Scale (Avens & Zelle, 1992).

Research further indicates that challenging students in rigorous environments, such as learning communities, promotes “deeper learning,” and increases the level of student achievement (e.g., Chesebro et al., 1999; MacGregor et al., 2000; Matthews, 1986; Tinto & Russo). In a review of the Washington Center's compilation of 70 assessment studies of learning communities, MacGregor, Tinto, & Lindblad (2000) reported, "Learning community students generally fare better academically, socially and personally than those in comparison groups," especially average and at-risk students (p. 43). In a longitudinal study conducted by Tinto and Russo (1993b), students in learning community classes achieved more academic success than those enrolled in freestanding classes. Results from similar studies also indicate that learning community students also

received higher grades than their counterparts in freestanding classes (i.e., Chesebro et al., 1999; Shapiro & Levine, 1999).

Overall, the most promising measure of intellectual challenge has been the students' own responses to their learning community experiences. When asked to discuss the first coordinated studies experience, a Washington Community College student stated the following:

I just had never been taught to think. I was just taught to regurgitate but never to think, and it was just amazing. . . . I was really just narrow-minded, and I took [this course] and everything was really challenged; it was just great. . . . It was the first time in my whole life I had ever been challenged mentally. I got into the classroom with 60 people and three teachers, and my mind exploded. (as cited in W. S. Moore, 1996)

#### Assessing Classroom Environment

The importance of classroom learning has been increasingly examined over the last 2 decades (Fraser, 1994). Unfortunately, most classroom environment research has been conducted at the primary and secondary levels (Winston et al., 1994).

The study of classroom environment evolved from environmental theories of Lewin (1935), who referred to the environment as “life space,” which contains the “person and the psychological environment that exists for him” (p. xi). Bronfenbrenner (1979) defined an ecological environment as one that includes the individual and other people and their interactions. When relationships involving interactions with others meets students’ interests and goals, and students seem to “fit” with their environment,

they are more likely to persist (e.g., Astin, 1975; Fisher & Fraser, 1982, 1983, 1992; Halpin, 1990; Moos, 1976; Pascarella & Terenzini, 1991; Tinto, 1975).

Moos (1979) examined factors of classroom social environment and their effect on student behaviors. Moos posited that classroom environments have different climates that influence student development, relating that instructors need to understand these phenomena in order to promote optimal learning. In his study of several different types of high schools, Moos asserted that different types of schools had different classroom environments, which, in turn, influenced students' perceptions. For example, vocational school students perceived their classroom environments low in teacher support, but high in competition, while alternative school students perceived high teacher involvement and affiliation (Vahala & Winston, 1994).

Moos (1979) also discovered that students were more satisfied in classes that emphasized social high student and faculty involvement and interaction, innovative teaching methodology, and structured coursework with clearly defined rules (Winston et al., 1994). In contrast, students were more negative and hostile in environments that were characterized by low structure, support, and organization (Winston et al., 1994).

Limited classroom research also indicates that students' perception of the classroom environment influences their intellectual development (e.g., Fisher & Fraser, 1982, 1983; Hadley & Graham, 1987; Moos, 1980; Moos & Trickett, 1974; Vahala & Winston, 1994). Fisher and Fraser (1982) asserted that the nature of the classroom environment can substantially lead to predicting course achievement. They also maintained that students prefer a positive learning environment and teachers who display

high support and low control. In a relatively rare postsecondary study, DeYoung (1977) also found that the students' perceptions of their environment not only affected their intellectual development, but students attended classes more frequently if the learning climate matched their preferred learning styles.

Moos (1980) developed the Classroom Environment Scales (CES) to study classroom environment in junior high classrooms. He identified three theoretical dimensions in the classroom: relationship, personal growth and goal orientation, system maintenance and change (Vahala & Winston, 1994). Subconcepts, including involvement, affiliation, teacher support, task and goal orientation, order and organization, and clarification of rules, evolved. (Moos, 1980). In turn, Darkenwald (1989) utilized the Moos instrument, extracting teacher behavior, teacher-student interaction, and student-student interaction to develop the Adult Classroom Environment Scale (ACES). Based on these developments, Winston et al, (1989) developed the College Classroom Environment Scales (CCES), which was utilized as the survey instrument in this study (see Appendix B).

Vahala and Winston (1994) used the CCES to examine whether classroom environment varied according to the type of institution, academic discipline, and the kinds of effects that environments have on students' learning. They surveyed students from 35 introductory-level English, laboratory and behavioral science classes at two public 2-year colleges, two private liberal arts colleges, and one public university (Vahala & Winston, 1994). The results indicated differences in institutional types, and when

controlled for class size, statistically significant differences were found on three of six scales. The researchers made the following observation:

Liberal arts colleges seem to be delivering on their advertising that there are closer relationships between faculty members and students, and that faculty show greater interest in and concern for the welfare of their students than is true at the larger university. (Vahala & Winston, 1994, p. 118)

Vahala and Winston (1994) also found that students at 2-year colleges perceived greater academic demands than those at liberal arts colleges, attributing the difference to the possibility of “a larger gap between students’ academic competencies and faculty performance expectations at two-year colleges” as opposed to the liberal arts college or university (p. 118). The researchers also found that university students perceived more structure than those at the liberal arts or 2-year colleges, and students perceived their English classes as more intellectually stimulating of the three course types, while they perceived the lab classes as the most intimidating and hostile. The researchers concluded that different academic disciplines may create different types of classroom climates, noting that “most post-secondary education faculty members have received limited academic preparation on the art and science of teaching,” adding that “the learning climate created may well be a matter of tradition rather than purposeful pedagogical practice” (Vahala & Winston, 1994, p. 119).

Although this study was limited in scope, it will add to the body of literature, which posits that classroom environment makes a difference (e.g., Fisher & Fraser 1982, 1983, 1992; Moos, 1976; Pascarella & Terenzini, 1991). Vahala and Winston (1994)

stated the need for more classroom research in the following: If the goal of instruction is to encourage or facilitate student learning, then it seems clear that instructors should carefully examine the kind of social climate that is created in their classrooms and whether that climate is likely to promote or detract from learning” (p. 120).

### Summary

This study will add to the collective body of classroom environment research and provide new insights regarding the assessment of learning communities at the community college level, regarding cathectic learning climate, inimical ambiance, academic rigor, affiliation, and structure. This type of scarce data will benefit instructors and administrators who plan on developing, implementing, and sustaining learning communities on college campuses throughout Texas and possibly throughout the United States. Furthermore, this study will enhance learning community effectiveness by providing feedback for overall course improvements and will ultimately benefit students enrolled in learning community classes at the CCCCD or the DCCCD.



## CHAPTER 3

### METHODOLOGY

This chapter examines whether there were any significant differences in cathectic learning climate, inimical ambiance, academic rigor, affiliation, and structure among students in learning communities and student in freestanding classes. The five parts of this chapter consist of the research design, population sample, instrumentation, and data collection and analysis procedures.

#### Research Design

The research design is an observational study involving intact groups and convenient sampling. A multivariate analysis of variance (Hotelling's  $T^2$ ) was performed on five dependent variables: cathectic learning climate (CLC), inimical ambiance (IA), academic rigor (AR), affiliation (AF), and structure (ST). Hotelling's  $T^2$  is the multivariate extension of the  $t$  test used to examine differences in population means. Although this method can be used for just one response variable, it is typically used when there are two or more variables (Mason, Tracy, & Young, 1995). The independent variable was learning community compared to freestanding classes (group). The statistical software SPSS 10.1 was used to conduct the tests. Follow-up independent  $t$  tests were also conducted to evaluate the differences in the means between the two groups and to explore which dependent variables contributed to the multivariate difference. The  $t$  tests also yielded  $p$  values, which the researcher used to determine significance based on the .05 alpha (Cronbach, 1951). The  $p$  value reported with a  $t$  test

represents the probability of error involved in accepting the research hypotheses about the existence of differences between groups (Nunnally, 1967).

### Population

The Collin County Community College District (CCCCD) has a comparatively small student population, with a total district-wide enrollment of 12, 704 students in Fall 2001; approximately 60% of the students attend classes part-time (Tech-Prep Staff, 2001). The gender percentages for the CCCCCD were comprised of the following: 48.5% female and 51.5% male (Tech-Prep Staff, 2001).

The student population of the Dallas County Community College District (DCCCCD) has over four times the student population of the CCCCCD, with a total district-wide enrollment of 54, 346 (DCCCCD, 2001). Richland College (RLC) had 13, 337 students in Fall 2001, which was larger than the total number of students in the entire CCCCCD in the same year (DCCCCD, 2001). The gender percentages for the DCCCCD were comprised of the following: 56.8% female and 43.2% male (DCCCCD, 2001).

The average age of students surveyed on all four campuses ranged between 20-25 years old, which is slightly below the district averages of 26 in the CCCCCD and 28 in the DCCCCD. The ethnicity of students also varied between the districts (see Table 1).

Table 1

*Ethnicity Percentages for the DCCCD and the CCCCCD (2001)*

District	Ethnicity				
	White	African-American	Hispanic	Asian	Other
CCCCD	75.3	7.4	10.4	6.5	0.4
DCCCD	44.9	21.8	19.6	8.6	5.1

Sample

The sample was taken from students at four North Texas community college campuses during the Spring 2002 semester. Richland College (RLC), the largest campus of the Dallas County Community College District (DCCCD), was surveyed, along with the following three campuses of the Collin County Community College District (CCCCD): Central Park Campus (CPC) in McKinney, Preston Ridge Campus (PRC) in Frisco, and Spring Creek Campus (SCC) in Plano.

Three learning communities and six corresponding freestanding classes were surveyed at Richland College (RLC). Race, Ethnicity, & Community combined history and sociology; Shakespeare as Literature & Performance Art combined English and drama; and The South: From Scarlet to Sunbelt combined English and history.

Two learning communities and five freestanding classes were surveyed at CPC. The Way We Are: Issues in U.S. History combined history and English, and The Politics

of Crime and Deviance in Society combined sociology and government. One learning community, Crisis!!! Social Problems & Public Policy Thru History, and one freestanding class were also surveyed at PRC. One learning community, Fit Mind, Fit Body, which combined physical education and psychology, and three freestanding classes were surveyed at SCC (see Table 2).

The average age of students surveyed on all four campuses ranged between 20-25 years old, which is slightly below district averages of 26 in the CCCC and 28 in the DCCC.

Table 2

*Sampling Sizes*

Campus	Learning community (LC) group	Freestanding (FR) group
RLC	49	90
CPC	38	101
PRC	24	17
SCC	16	58
Total	127	266

## Instrumentation

Based on the literature and conversations with leading learning community researchers, MacGregor, Matthews, and Smith (personal communication, April 5-6, 2002), it was clear that there are few instruments available to measure learning communities, and of the few that have been examined, the reliability has also been questionable (i.e., Minkler, 2000). These researchers further agreed that there is a substantial need to develop more reliable instruments to assess learning communities on a variety of levels.

Regarding the significant drawback of finding a reliable survey instrument for this study, MacGregor (personal communication, March 6, 2002) referred to The College Classroom Environment Scales (CCES) designed by Winston et al. (1989) to assess the social climate of college classrooms. After obtaining a copy of the CCES, examining its content and reliability and obtaining Winston's written permission, the instrument was chosen for this study (see Appendix B).

The CCES consists of 62 Likert scale items on a self-report questionnaire. The item responses were arranged as follows: A= *Never or almost never true*; B= *Seldom true*; C= *Occasionally true*; D= *Often true*; E= *Always or almost always true* (see Appendix B). The CCES is composed of the following six scales, which can be used independently: Cathetic Learning Climate (CLC), Professorial Concern (PC), Inimical Ambiance (IA), Academic Rigor (AR), Affiliation (AF), and Structure (ST) (see Appendix B). Although the survey was administered in its entirety, and data was collected on all 6 scales, Professorial Concern (PC), consisting of 12 items, was not

examined as it was beyond the scope of this study. Winston et al. (1994) describe the 5 scales examined in this study:

High scores on cathectic learning climate (CLC) indicate an energetic atmosphere in which students are enthusiastic to learn and are stimulated “to be active participants in the class and seek classmates’ opinions and reactions” (Winston et al., 1994, p. 12). Students are encouraged to participate in class discussions and exchange ideas in cooperative discussions. This scale is comprised of 19, a sample of which includes “This class seems to go fast.” “Students are enthusiastic about participating in class activities.”

High scores on inimical ambiance (IA) characterize students’ perceptions of a hostile, competitive, and rigidly structured classroom environment in which students are not encouraged to ask questions and openly discuss ideas. Expectations in this environment are unclear and authority is perceived as aggressive and depersonalizing. This scale is comprised of nine items, a sample of which includes “In order to get good grades in this class it’s important to agree with the professor.” “Students do not feel comfortable volunteering ideas or opinions in this class.”

High scores on academic rigor (AR) indicate an intellectually challenging and demanding environment. The class is viewed as fast-paced and maintains high standards for achievement. There are perceived expectations that students will devote time and energy to completing assignments and produce quality work. This scale is comprised of eight items, a sample of which includes “Students in this class are challenged to think for themselves.” “The professor has set high standards that students must meet in order to get good grades.”

High scores on affiliation (AF) indicate an environment that students perceive as supportive, friendly, student-centered, and promoting informal interaction. Students perceive the development of mature interpersonal relationships and cooperation as being valued. This scale is comprised of six items, a sample of which includes “There are people in this class with whom I would like to be friends.” “Relationships established among students in this class carry over outside the classroom.”

High scores on the structure scale describe an environment that students perceive as having clearly stated course content, and the syllabus is closely followed. The instructor is seen as the content authority in the classroom. This scale is comprised of eight items, a sample of which includes “There are firm deadlines when things are due.” “Class expectations are clearly spelled out.”

### Reliability

Reliability of the instrument was examined before it was chosen for this study. Considering the low reliability, .67, of a learning community survey developed by Minkler (2000), the CCES had higher reliability coefficients. In order to ensure that the instrument had sufficient reliability for this study, Cronbach's alpha, a statistic that measures the reliability of tests, observations, experiments, or measurements by estimating the extent to which they provide the same results on repeated trials, was examined. Cronbach's alpha is a value between 0 and 1; values closer to 0 indicate low reliability, while values closer to 1 indicate high reliability (e.g., Carmines & Zeller, 1979; Cronbach, 1951). Nunnally (1967) has indicated that .7 is an acceptable reliability coefficient.

The reliability of the CCES was determined using the coefficient alpha procedure to estimate the internal consistency of the scales and test-retest methods to estimate their consistency over time. Winston et al. (1994) calculated coefficient alphas using data from three studies, which are averaged as follows: Cathartic Learning Climate (.91), Professorial Concern (.89), Inimical Ambiance (.73), Academic Rigor (.74), Affiliation (.73), and Structure (.77). According to Winston et al., the internal consistency of the scales seem to be stable, and the reliability coefficients make it “a sufficiently reliable and valid self-report of students’ perceptions of the classroom social environment for use with groups of students” (p. 17).

#### Validity

Several studies were conducted by Winston, Vahala, Nichols, and Gillis (1988, 1989) to estimate validity, which is an inference made from a test score (Anastasi & Urbina, 1997). The authors (Winston et al., 1988) examined construct validity in two phases. In the first phase, they conducted a factor analysis of 143 items that were administered to a total of 47 classes at a small private and a large public university in the southeastern part of the United States. Coefficient alphas were calculated for each of the six factors. Items were eliminated if they duplicated other factors, had a negative correlation with other factors, loaded less than .30 on any factor, or “loaded within .05 with factors other than the one to which is was most heavily loaded” (Winston et al., 1994, p.12). In the second phase, Winston et al. (1989) administered the remaining 91 items to 1,112 students enrolled in 81 classes at a small private and a large public university in the southeastern part of the United States. A second factor analysis was



conducted, eliminating 29 items based on the same criteria used in the first phase (Winston et al., 1988). The final result was the 62-item version of the CCES used in this study (Winston et al., 1989).

As reported by Winston et al. (1994), the CCES and the Learning Styles Inventory (LSI) (Kolb, 1985) were used in a few studies to compare the scores of the instruments in order to establish congruent validity. In one study, the researchers used learning style as the independent variable, and performed a one-way analysis of variance on each of the CCES scales. Because no statistically significant differences of means were discovered, the researchers concluded that the students' perceptions of classroom climate are "independent of their preferred learning styles and are not just an expression of their personalities" (Winston et al., 1994, p. 14).

In a similar study, the CCES and the College and University Classroom Environment Inventory (CUCEI) were administered. The CUCEI, based on Moos and Trickett's (1974) dimensions of secondary classroom environments, was developed by Fraser (Winston et al., 1994). The CUCEI contains seven scales of seven items: Personalization, Involvement, Student Cohesiveness, Satisfaction, Task Orientation, Innovation, and Individualization (Winston et al., 1994). The scales of the CCES and the CUCEI were correlated, and the CLC and PC from the CCES correlated moderately to moderately high with all scales from the CUCEI; IA was also moderately correlated; and the remaining scales of the CCES correlated positively, but at a relatively low level (ranging from .10 for ST with INN to .39 for AR with INN) (Winston et al., 1994).

## Methodology

The researcher had to acquire written permission from several sources before collecting data for this study. First, the researcher contacted Professor Winston at the University of Georgia via email and acquired written permission to use the CCES as the survey instrument (see Appendix B). Then, the researcher personally met with the vice president of academic affairs at the CCCCD, who gave written consent to conduct the study at Central Park Campus, Preston Ridge Campus and Spring Creek Campus (see Appendix A). Next, the researcher personally met with the learning communities coordinator at Richland College, who submitted the research proposal to the vice president of student learning and the vice president of institutional effectiveness and economic development, who, in turn, granted written permission to conduct the study at Richland College (see Appendix A). With the help of the learning community coordinators at the CCCCD and the DCCCD, the researcher also contacted learning community instructors at all four campuses via email and sent them a letter explaining the significance of the study and asking for their voluntary participation (see Appendix B). Finally, the researcher submitted the research proposal, written consent to use the survey, and the signed institutional consent forms to Human Subjects at the University of North Texas, which granted written permission to conduct this study (see Appendix A).

## Data Collection Procedures

The CCES, a 62-item instrument, reproduced on double-sided white paper, along with written instructions to the students, was delivered to faculty during the last week of April with instructions on how to administer the surveys and where to return the

completed surveys (see Appendix B). The CCES was administered in the 1st week of May of the Spring 2002 semester to the experimental groups enrolled in learning communities and the control groups enrolled in freestanding classes. Each instructor appointed a student to distribute and collect the surveys in his/her classes. Students were asked to record their responses on blue and white General Purpose NCS answer sheets, which were scanned at the University of Texas Center for Academic Computing in order to create data files. Students were instructed to include only the course identification numbers on the section marked “identification number” on the left-hand side of the answer sheets as well as to bubble in their gender and age in the sections marked “sex” and “birthdate.”

The designated students at Central Park Campus (CPC), Preston Ridge Campus (PRC), and Spring Creek Campus (SCC) were instructed to collect and return the completed surveys in a sealed envelope, marked with the course and section number, to the designated office on each campus. The researcher, in turn, collected the envelopes from these offices.

#### Data Analysis Procedures

This research design is an observational study involving intact groups and convenient sampling. The independent variables in this study were cathectic learning climate, inimical ambiance, academic rigor, affiliation, and structure. The dependent variables were learning community and freestanding classes. Both groups were administered the CCES, an instrument developed by Winston et al. (1989) to measure classroom environment using six scales (see Appendix B). The data were coded and

entered with the assistance of data entry services and Research and Statistical Support at the University of North Texas. The data were analyzed using SPSS 10.1 to test the following null hypotheses:

H<sub>1</sub>: There is no significant difference in cathectic learning scores, as measured by the CCES, among students in learning communities and students in freestanding classes.

H<sub>2</sub>: There is no significant difference in inimical ambiance, as measured by the CCES, among students in learning communities and students in freestanding classes.

H<sub>3</sub>: There is no significant difference in academic rigor, as measured by the CCES, among students in learning communities and students in freestanding classes.

H<sub>4</sub>: There is no significant difference in affiliation, as measured by the CCES, among students in learning communities and students in freestanding classes.

H<sub>5</sub>: There is no significant difference in structure, as measured by the CCES, among students in learning communities and students in freestanding classes.

A multivariate analysis of variance (Hotelling's  $T^2$ ) was performed on five dependent variables: cathectic learning climate (CLC), inimical ambiance (IA), academic rigor (AR), affiliation (AF) and structure (ST). The independent variable was learning community compared to freestanding classes (group). This multivariate analysis was also performed to control for Type I error rate. Follow-up independent groups *t* tests were also performed on the dependent variables to examine mean differences and to explore which dependent variables contributed to the multivariate difference.

## Summary

Chapters 4 and 5 of this study report the results of the data analysis, discuss the significance of the findings, and provide recommendations for future research.

## CHAPTER 4

### FINDINGS

The purpose of this study was to determine whether there was a significant difference in cathectic learning climate, inimical ambiance, academic rigor, affiliation, and structure among students in learning communities and freestanding classes. This chapter is organized into three sections. The first section provides an overview of the participants in the study, and the second contains a description of the data and statistical analysis. The last section evaluates the hypotheses against the supporting analysis.

#### Participants in the Study

A total of 393 students were surveyed at four different community college campuses in the Dallas area of North Texas. The number of students who were surveyed in learning communities (LC) was 127, and the number of students surveyed in freestanding classes (FR) was 266 (see Table 1).

#### Study Data and Statistical Analysis

This research design is an observational study involving intact groups and convenience sampling (e.g., Leedy, 1997). The independent variables in this study were cathectic learning climate, inimical ambiance, academic rigor, affiliation and structure. The dependent variables were learning community and freestanding classes. Both groups were administered the CCES developed by Winston et al. (1989) (Appendix B). The data were coded and entered with the assistance of data entry services and Research and

Statistical Support at the University of North Texas. The data were analyzed using SPSS 10.1.

A multivariate analysis of variance (Hotelling's  $T^2$ ) was performed on five dependent variables: cathectic learning climate (CLC), inimical ambiance (IA), academic rigor (AR), affiliation (AF), and structure (ST). The independent variable was learning community compared to freestanding classes (group). The multivariate analysis was also performed to control for Type I error rate.

Using Pillai's trace, the combined dependent variables were significantly affected by group:  $F = 12.26$ ,  $df = 5, 387$ ,  $p < .0001$ . Pillai's trace is a multivariate measure of association to ensure maximum protection against finding a statistical significance when there is none (Olson, 1976). The effect size, overall, was medium (eta squared = .14), given that academic rigor and cathectic learning have nonsignificant univariate mean differences.

Follow-up independent groups  $t$  tests were conducted to evaluate the differences in the means between the two groups and to explore which dependent variables contributed to the multivariate difference (see Table 2).

Table 3

*Group Descriptive Statistics*

Group	N	%
Learning Communities	127	32
Freestanding	266	68

Table 4

*Independent T Test*

Dependent variable	Group	Mean	Standard deviation	t	df	p
Academic Rigor	Learning Community	3.76	.60	1.44	391	.151
	Freestanding Classroom	3.67	.59			
Affiliation	Learning Community	3.79	.74	2.51	391	.013*
	Freestanding Classroom	3.59	.70			
Structure	Learning Community	3.74	.68	4.67	391	.000*
	Freestanding Classroom	4.06	.61			
Cathectic Learning	Learning Community	3.58	.57	.99	391	.319
	Freestanding Classroom	3.52	.57			
Inimical Ambiance	Learning Community	2.20	.71	3.15	391	.002*
	Freestanding Classroom	1.98	.60			

\*  $t > 1.96$ ,  $p < .05$ , statistically significant.

Hotelling  $T^2$  using multivariate analysis of variance with two groups yielded  $F = 12.26$ ,  $df = 5, 387$ ,  $p < .0001$ . The effect size, overall, was small (eta squared = .14) because academic rigor and cathectic learning have nonsignificant group mean differences. The multivariate test, however, was performed to control for Type I error rate and had power greater than .80.



### Analysis of Hypotheses

**H<sub>1</sub>: There is no significant difference in cathectic learning climate, as measured by the CCES, among students in learning communities and students in freestanding classes.**

High scores on the cathectic learning climate scale (CLC) indicate an energetic atmosphere in which students are enthusiastic to learn and are stimulated “to be active participants in the class and seek classmates’ opinions and reactions” (Winston et al., 1994, p. 12). Students are encouraged to participate in class discussions and exchange ideas in cooperative discussions.

The results of this study indicated that learning community students did not perceive a greater sense of cathectic learning than students in freestanding classes. The multivariate analysis detected no significant differences in cathectic learning climate between learning communities (LC) and freestanding (FR) groups. The differences between LC ( $M = 3.58$ ) and FR ( $M = 3.52$ ) were not significant ( $p = .319$ ) and did not exceed the critical value at the preset level ( $p < .05$ ). Therefore, this study failed to reject the null for the first hypothesis.

**H<sub>2</sub>: There is no significant difference in inimical ambiance, as measured by the CCES, among students in learning communities and students in freestanding classes.**

High scores on the inimical ambiance scale (IA) characterize students’ perceptions of a hostile, competitive, and rigidly structured classroom environment in which students are not encouraged to ask questions and openly discuss ideas.

Expectations in this environment are unclear, and authority is perceived as aggressive and depersonalizing.

The results of this study indicated that learning community students perceived a greater sense of inimical ambiance than students in freestanding classes. The multivariate analysis detected a significant difference in inimical ambiance between learning communities (LC) and freestanding (FR) groups. The differences between LC ( $M = 2.20$ ) and FR ( $M = 1.98$ ) were significant ( $p = .002$ ), exceeding the critical value at the preset level ( $p < .05$ ). Therefore, this study rejected the null for the second hypothesis.

**H<sub>3</sub>: There is no significant difference in academic rigor, as measured by the CCES, among students in learning communities and students in freestanding classes.**

High scores on the academic rigor scale (AR) indicate an intellectually challenging and demanding environment. The class is viewed as fast-paced and maintains high standards for achievement. There are perceived expectations that students will devote time and energy to completing assignments and produce quality work.

The results of this study indicated that learning community students did not perceive a greater sense of academic rigor than students in freestanding classes. The multivariate analysis did not detect a significant difference in academic rigor between learning communities (LC) and freestanding (FR) groups. The differences between LC ( $M = 3.76$ ) and FR ( $M = 3.67$ ) were not significant ( $p = .151$ ) and did not exceed the

critical value at the preset level ( $p < .05$ ). Therefore, this study failed to reject the null for the third hypothesis.

**H<sub>4</sub>: There is no significant difference in affiliation, as measured by the CCES, among students in learning communities and students in freestanding classes.**

High scores on the affiliation scale (AF) indicate an environment that students perceive as supportive, friendly, student-centered, and promoting informal interaction. Students perceive the development of mature interpersonal relationships and cooperation as being valued.

The results of this study indicate that learning community students perceived a greater sense of affiliation than students in freestanding classes. The multivariate analysis detected a significant difference in affiliation between learning communities (LC) and freestanding (FR) groups. The differences between LC ( $M = 3.79$ ) and FR ( $M = 3.59$ ) were significant ( $p = .013$ ), exceeding the critical value at the preset level ( $p < .05$ ). Therefore, this study rejected the null for the fourth hypothesis.

**H<sub>5</sub>: There is no significant difference in structure, as measured by the CCES, among students in learning communities and students in freestanding classes.**

High scores on the structure scale (ST) describe an environment that students perceive as having clearly stated course content, and the syllabus is closely followed. The instructor is seen as the content authority in the classroom.

The results of this study indicate that students in freestanding classes perceived a greater sense of structure than students in learning communities. The multivariate

analysis detected a significant difference in structure between learning communities (LC) and freestanding (FR) groups. The differences between LC ( $M = 3.74$ ) and FR ( $M = 4.06$ ) were significant ( $p = .000$ ), exceeding the critical value at the preset level ( $p < .05$ ). Therefore, this study rejected the null for the fifth hypothesis.

#### Instrument Reliability

The reliability of the CCES in this study was determined by using the coefficient alpha procedure to estimate the internal consistency of the scales, which yielded the following reliability coefficients: Cathectic Learning Climate (.85), Inimical Ambiance (.71), Academic Rigor (.70), Affiliation (.78), and Structure (.78).

#### Summary

Chapter 5 provides a summary of the study, a discussion of the significance of the findings, and recommendations for future research.

## CHAPTER 5

### SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter summarizes the study and discusses the findings in an effort to determine if learning communities really do make a difference on a variety of levels. Implications for learning communities and recommendations for future studies are also discussed.

#### Summary of Findings

The purpose of this study was to determine whether there was a significant difference in cathectic learning climate, inimical ambiance, academic rigor, affiliation and structure among students in learning communities and freestanding classes.

The sample of 393 students was taken from students at four North Texas community college campuses during the Spring 2002 semester. Richland College (RLC), the largest campus of the Dallas County Community College District (DCCCD), was surveyed, along with the following three campuses of the Collin County Community College District (CCCCD): Central Park Campus (CPC) in McKinney, Preston Ridge Campus (PRC) in Frisco, and Spring Creek Campus (SCC) in Plano.

The research design was an observational study involving intact groups and convenient sampling. A multivariate analysis of variance (Hotelling's  $T^2$ ) was performed on five dependent variables: cathectic learning climate (CLC), inimical ambiance (IA), academic rigor (AR), affiliation (AF), and structure (ST). The

independent variable was learning community compared to freestanding classes (group). The multivariate test was performed to control for Type I error rate and had power greater than .80. The statistical software SPSS 10.1 was used to conduct the tests. Follow-up independent groups *t* tests were also conducted to evaluate the differences in the means between the two groups and to explore which dependent variables contributed to the multivariate difference.

### Discussion of Findings

The results of the study yielded significant differences in inimical ambiance, affiliation, and structure. The hypotheses are discussed as follows:

**H<sub>1</sub>: There is no significant difference in cathectic learning scores, as measured by the CCES, among students in learning communities and students in freestanding classes.**

High scores on cathectic learning climate (CLC) indicate a charged academic atmosphere, which stimulates students to be active participants in the class and to seek classmates' opinions and reactions. Although the literature (e.g., MacGregor et al., 2000; Shapiro & Levine, 1999; Smith, 2001; Smith & Hunter, 1988) indicates that learning communities provide a more stimulating atmosphere for learning than freestanding classes, the results of this study did not indicate a significant difference with LC ( $M = 3.58$ ) and FR ( $M = 3.52$ ) and ( $p = .319$ ).

These findings may be explained by the limitations of this study. The sample size was relatively small, because the study was limited to students enrolled in learning communities and freestanding classes at Central Park Campus, Preston Ridge Campus

and Spring Creek Campus of Collin County Community College District (CCCCD), and Richland College (RLC), the largest campus of the Dallas County Community College District (DCCCD). Perhaps the findings in cathectic learning climate would have been more significant if more learning community students were surveyed on other campuses, which would increase sample sizes and improve the ability to generalize the findings.

The students surveyed also varied in prior knowledge, skills, and attitudes and in their experience with collaborative learning. They also varied in level of education, life experience, motivation, and socioeconomic status. An examination of the students' backgrounds may provide valuable insights into learning styles and types of classroom environments that stimulate them. Similarly, the instructors varied in their level of experience in team-teaching and their training to teach learning communities. Oates and O' Connor (2001) explained that teaching a learning communities emphasizes knowledge, skills, and attitudes that are not necessarily required in the traditional classroom, and "the training for and experience of a learning community can have a powerful impact on how a faculty member teaches any class" (p. 9).

Smith (2001) stressed the need for faculty development and the need to examine student learning more closely, emphasizing the need to find "better ways to put what we know about student learning into our learning community designs" (p. 7). Smith (2001) also warned that

unless learning communities build upon the best approaches to student learning, the structural changes will only produce minimal improvements. Too many learning communities are little more than block registration devices, with little

alteration of the teaching and learning environment. (p. 7)

As indicated in the literature (e.g., Gabelnick et al., 1990; MacGregor, 1987; Shapiro & Levine, 1999; Smith, 2001), measuring learning is no easy task. Thus, a survey instrument alone may not capture the complex levels of learning that take place in a classroom (i.e., Smith, 2001). Researchers such as Smith (2001) and MacGregor (1987) have suggested using qualitative measures to capture multidimensional learning.

**H<sub>2</sub>: There is no significant difference in inimical ambiance, as measured by the CCES, among students in learning communities and students in freestanding classes.**

High scores on inimical ambiance (IA) describe an environment that students see as being hostile, highly competitive, rigidly structured, and one in which they are uncomfortable asking questions or giving opinions. The results of this study indicated a significant difference between LC ( $M = 2.20$ ) and FR ( $M = 1.98$ ) with ( $p = .002$ ). In contrast to the literature, which suggests that learning communities promote a less competitive and a more positive learning environment (e.g., Gabelnick et al., 1990; Shapiro & Levine, 1999), the results of this study indicate the opposite.

The lack of significant difference in inimical ambiance may be due to the way the statistics were examined. When examined in subgroup comparisons, which controlled for instructor variation, the results more closely matched the literature. Thus, instructor variation may be the key factor in this finding. Some instructors may have more experience teaching learning communities than other instructors. As indicated in the



literature (e.g., Gabelnick et al., 1990; Minkler, 2000; Shapiro & Levine, 1999; Smith, 2001), more studies need to be conducted to examine instructor differences.

It was interesting, however, to note the differences in instructors' attitudes toward this study. Some instructors were more enthusiastic and receptive to assessing their classes than others. One instructor seemed particularly concerned about having her classes surveyed and critically questioned the nature of the study. After the researcher answered the instructor's questions via email and a personal conversation, she reluctantly administered the survey to her classes. After examining class comparisons on an individual basis, the researcher noticed that students in both of the instructors' classes perceived a more hostile environment compared to others. The researcher also questioned whether this instructor was prepared to teach a learning community.

An additional interesting observation was that another instructor decided not to administer the survey to his students after the researcher had given him the surveys, claiming that he did not like the questions. A few students in this instructor's class related that he did not have a positive classroom environment. Based on the instructor's negative comments and the reactions of a few of his students, the researcher concluded that this instructor may have also had a more hostile and rigid classroom environment; thus, he may have anticipated the negative student responses on the survey.

After contacting and working with numerous instructors, the researchers' personal observations were congruent with the literature, which posits that learning community instructors tend to promote an open atmosphere that is conducive to sharing ideas and building a sense of community. However, the instructors who did not reflect a positive

attitude toward teaching, learning, and assessment may have been the reason that the findings for inimical ambiance contradicted the literature.

**H<sub>3</sub>: There is no significant difference in academic rigor, as measured by the CCES, among students in learning communities and students in freestanding classes.**

High scores on academic rigor (AR) describe an environment that is perceived as intellectually challenging and demanding. This study indicated no significant difference between LC ( $M = 3.76$ ) and FR ( $M = 3.67$ ) with ( $p = .151$ ). However, these results are not consistent with the literature, which indicates that learning communities promote active learning in which the students are intellectually challenged and encouraged to make connections in their learning (e.g., MacGregor, 1987, 1990, 1991; Shapiro & Levine, 1999), which Smith (2001) called “deeper learning” (p. 2).

The lack of significant findings on this variable may also be attributed to the limitations of this study. One of the main limitations of this study was instructor variance. Some instructors had more experience in teaching learning communities than others, and some instructors tended to challenge students and require a higher level of work than others. Academic rigor may also vary according to subject pairings. For example, a course pairing of physical education and psychology may be perceived by the students as less rigorous than an English and history pairing. The difference between LC and FR on this scale may have also been more significant with a larger sample size, especially considering the borderline results.

**H<sub>4</sub>: There is no significant difference in affiliation, as measured by the CCES, among students in learning communities and students in freestanding classes.**

High scores on affiliation (AF) indicate students' perception of numerous informal interactions with each other within a supportive and friendly atmosphere. The results of this study revealed a significant difference between LC ( $M = 3.79$ ) and FR ( $M = 3.59$ ) with ( $p = .013$ ), which indicates that learning communities students perceive a greater sense of affiliation than freestanding students in their classrooms. These results reflect the literature, which asserts that learning communities encourage students to foster relationships with each other as well as with their instructors (e.g., Gabelnick et al., 1990; MacGregor, 1991; Masterson, 1998; Shapiro & Levine, 1999; Tinto et al., 1994). The literature also suggests that in this social context, learning communities provide rich experiences that foster critical thinking and achievement as well as affective dimensions, such as sense of community, self-efficacy, and learner empowerment (e.g., Johnson & Johnson, 1991; MacGregor et al., 2000).

**H<sub>5</sub>: There is no significant difference in structure, as measured by the CCES, among students in learning communities and students in freestanding classes.**

High scores on structure (ST) describe an environment where students perceive that evaluation criteria and syllabi are clearly articulated and followed. This scale showed the most noticeable difference between means (LC= 3.74, FR= 4.06) with ( $p = .000$ ). As indicated by the literature (e.g., Gabelnick et al., 1990; Shapiro & Levine, 1999), learning communities seem to have a less rigid structure than freestanding classes,

and students tend to favor this type of classroom environment. Their flexible structure enables instructors to choose how “to make meaning of the material” and make connections among disciplines (Gabelnick et al., 1990, p. 55).

### Implications for Learning Communities

After examining the results of this study and the related literature, it is becoming increasingly clear that the level of learning community involvement and institutional support varies (e.g., Gabelnick et al., 1990; Shapiro & Levine, 1999; Smith, 2001). For learning communities to prosper and make a difference to students, faculty, and the overall institution, everyone needs to be involved; colleges also need to become more connected (e.g., Gabelnick et al., 1990; Shapiro & Levine, 1999; Smith, 2001; Smith & Hunter, 1988).

In his speech at the DCCCD district conference, Palmer (2002) discussed the “pathology of disconnection,” urging colleges to move away from traditionally segmented boundaries and toward more interdisciplinary modes of instruction that promote a sense of community, one that involves every campus member, from the janitor to the university president.

Change is sometimes difficult. As with any new movement, learning communities face some challenges in the future (Smith, 2001). In the words of Shapiro and Levine (1999), “There is nothing easy about changing campus culture. It has been described, variously, as akin to turning a battleship or, less reverently, herding cats” (p. 196). Smith (2001) outlined the challenges of sustaining learning communities in student

learning and faculty development, diversity, institutional change, and purpose. In turn, these difficult challenges provide a framework for exploring future studies.

### Recommendations for Future Research

Although this study has answered some questions concerning cathectic learning climate, inimical ambiance, academic rigor, affiliation, and structure in learning communities, as compared to freestanding classes, it has raised even more questions.

1. How do we assess learning communities? Before attempting to answer this question, institutions must first determine what they want to measure. Learning communities are difficult to measure because they are multifaceted. Valid assessment measures should attempt to address multiple perspectives (Schilling & Schilling, 1998). As pointed out by several researchers (e.g., Gabelnick et al., 1990; MacGregor, 1987; Schilling & Schilling, 1998; Shapiro & Levine, 1990), quantitative data alone cannot adequately describe the multidimensional development of students. Qualitative data provides deeper insight into self-reflection and discovery (Gabelnick et al., 1990). MacGregor (personal communication, April 5, 2002) suggested combining both quantitative and qualitative types of assessment to examine the multiple dimensions of learning communities.

However, institutions often base their decisions on quantitative, or “hard” data, and there is a need for more reliable survey instruments. Matthews (personal communication, April 5, 2002) discussed the need for developing new instruments, admitting, “the state of learning community assessment is not so good; we are still in our infancy about assessment.” In order to conduct this necessary research, statistically

reliable and valid instruments need to be developed and piloted to measure learning communities on a variety of levels, including the hypotheses in this study. Although the Measure for Intellectual Development (MID) has been used to measure intellectual development in learning communities (i.e., Avens & Zelle, 1992; MacGregor, 1987), it is a relatively expensive and time-consuming tool, which requires outside graders. More newly developed instruments, such as the pre and post-test instruments developed by Chesebro et al. (1999), may be utilized in future research endeavors.

2. Who needs to be involved in assessment? A critical component of increasing institutional commitment to sustaining learning communities is also a need for assessment with larger sample sizes than this study. The data suffered due to several constraints, including lack of communication and distances between campuses, lack of student, faculty, and in some cases, institutional support. More support and cooperation by the participants, as well as including more colleges that offer learning communities, would have increased the sample size for this study, which probably would have yielded more significant findings. Thus, one suggestion is to involve more campuses in assessment and try to involve stakeholders as early as possible.

3. Is there a difference in learning outcomes among students in learning communities and freestanding classes? In order to answer this question, entry-level skills need to be examined. One of the unanswered questions in this study was whether students who enroll in learning communities have the same entry-level skills as students who enroll in freestanding classes. One method of tracking entry-level skills may be to compare high school grade point averages among learning community and freestanding

students. However, because colleges are becoming increasingly diverse, and the enrollments of international students is increasing (DCCCD, 2001), it may be necessary to compare scores on standardized tests, such as the TASP administered in Texas, to compare entry level skills between the two groups.

4. How do students with different backgrounds (age, gender, socioeconomic status, and cultural backgrounds) experience learning communities? As evident in the literature, college campuses are becoming increasingly diverse, and institutions need to examine the impact of their programs on students hailing from different backgrounds (Griffith & Connor, 1994). Women are attending college more than ever, comprising over half of the student population (Griffith & Connor, 1994). Gabelnick et al. (1990) also discuss the appeal of learning communities to women, suggesting that women are especially attracted to “connected knowing” (p. 79). Thus, there is an increasing need to determine how programs, such as learning communities, impact diverse learners.

5. How do students with different needs, such as international and developmental students, experience learning communities? In response to the growing numbers of international students and the need for student remediation, an increasing number of colleges, such as Richland College, have established learning communities for teaching English as a Second Language (ESOL) and for developmental studies (e.g., Gabelnick et al., 1990; Koolsbergen, 2001; Shapiro & Levine, 1999). Because these types of learning communities are relatively new, they provide a multitude of opportunities for future study.

6. What type of instructor teaches in a learning community? How do we train instructors to teach learning communities? Perhaps the most critical area for future research concerns instructor training, motivation, and incentives for teaching learning communities (e.g., Gabelnick et al., 1990; Oates & O'Connor, 2001; Shapiro & Levine, 1999; Smith, 2001). Teaching a learning community requires knowledge, skills, and attitudes that are not necessarily utilized in the traditional classroom setting, such as integrating a variety of subjects and utilizing collaborative strategies (Oates & O'Connor, 2001). Integrating teaching and learning also requires extra time and effort, and effective faculty collaboration and planning is essential for success (e.g., Gabelnick et al., 1990; Oates & O'Connor, 2001; Shapiro & Levine, 1999; Smith, 2001). The question is whether instructors need more professional development to teach learning communities more effectively and to what extent they need it. Other point to consider include instructor pairings as well as motivations for those who elect to teach learning communities and how teaching these classes relates to their overall job satisfaction.

7. How do faculty experience learning communities? Much of the learning community research has focused on student experiences, but there is a need to examine the instructors' experiences (e.g., Gabelnick et al., 1990; Oates & O'Connor, 2001; Shapiro & Levine, 1999; Smith, 2001). Although instructors report an increase in satisfaction for teaching and a renewed sense of purpose, more in-depth research is needed to determine to what extent teaching in a learning community has influenced their personal and professional development (e.g., Gabelnick et al, 2001; Shapiro & Levine, 1999; Smith, 2001).



Additional research may answer some of these questions and provide researchers with more clearly defined methods and strategies to assess the impact and effectiveness of learning communities on students, faculty, and institutions of higher education. This study has shed some light in this area. Learning communities seem to make a difference, but the question remains: Can they be sustained?

### Summary

Learning communities are gaining interest in higher education (Gabelnick et al., 1990; J. H. Levine & Tompkins, 1996; MacGregor et al., 2000; Shapiro & Levine, 1999; Smith, 2001). Although learning communities show some promising results on a variety of levels, more research needs to be conducted to determine if they really do make a difference in student learning and provide a sense of community to an increasingly diverse and nontraditional student body. In examining the literature and the results of this study, learning communities may be the answer for some students, but not for all. Gabelnick et al. (1990) expressed this point most eloquently:

Like most reformers, we have to do battle with zeal, that blinding imperious force that changes deliberation into a crusade. We believe that learning communities are an appropriate, rational, and ethical response to many challenges in higher education. Yet we constantly need to remind ourselves that learning communities are not a panacea, that they are not preferred universally, and that they are not a quick fix for a campus. Still, zeal has a way of creeping in. (p. 1)

## APPENDIX A

### Human Subjects



## COLLIN COUNTY COMMUNITY COLLEGE DISTRICT

Courtyard Center for  
Professional and Economic  
Development  
4800 Preston Park Blvd.  
P.O. Box 869055  
Plano, Texas 75086-9055  
(972) 985-3790

April 24, 2002

To Whom It May Concern:

Patricia Dodd has been granted permission to survey students in Learning Communities and freestanding classes at Collin County Community College during the month of May 2002.

Sincerely,

Sheryl Smith Kappus  
Vice President for Academic Affairs



# UNIVERSITY<sup>of</sup> NORTH TEXAS

*Office of Research Services*

April 23, 2002

Patricia M. Dodd  
5300 Keller Springs Rd. #2083  
Dallas, TX 75248

RE: Human Subjects Application No. 02-103

Dear Ms. Dodd,

Your proposal titled "Assessing the Efficacy of Learning Communities" has been approved by the Institutional Review Board and is exempt from further review under 45 CFR 46.101.

Enclosed is the consent document with stamped IRB approval. Please copy and **use this form only** for your study subjects.

The UNT IRB must review any modification you make in the approved project. **Federal policy 21 CFR 56.109(e) stipulates that IRB approval is for one year only.**

Please contact me if you wish to make changes or need additional information.

Sincerely,



Peter L. Shillingsburg  
Chair  
Institutional Review Board

PS:sb

## APPENDIX B

### The Instrument

April 30, 2002

Dear Faculty:

My name is Patricia Dodd, and I am a doctoral candidate at the University of North Texas. I am writing to ask your cooperation in acquiring much-needed information regarding the effectiveness of learning communities. As you are all involved in this “cutting edge” instructional methodology, I am asking for a small bit of your time.

I am conducting research in an attempt to examine whether learning communities are more effective than freestanding classes concerning the factors of cathectic learning climate, academic rigor, affiliation, and structure at the community college level. This significant research will be a valuable tool in assessing learning community effectiveness, and perhaps influence organizational decisions. Preliminary evidence shows the advantages of learning communities over freestanding classes, and I hope that my research will confirm these findings. The learning climates that you create in the classroom will be represented in this study, which is why your participation and support are invaluable.

I plan to collect data using the Classroom Environment Scales, developed by Dr. Winston and his doctoral students at the University of Georgia, which is a 62-item Likert scale instrument. Administering this survey instrument will require approximately 20 minutes of your class time during the last week of this semester. Please administer one survey to a learning community class and one to a freestanding class that you teach in the same subject (e.g. If you teach an LC class with English 1301 and History 1301, you would survey the LC class and an English 1301/or History 1301- preferably both), so I can compare the LC and the freestanding classes. You will need to designate a student to distribute and collect the surveys within 20 minutes and have this student drop off the sealed envelope containing the completed surveys to a designated site on campus.

As a fellow instructor, I realize your time is valuable, particularly in the death throes of the semester. However, this research is fundamental substantiation for what we do. I greatly appreciate your time and cooperation in this endeavor. This study has been reviewed and approved by the UNT Committee for the Protection of Human Subjects (940/565-3940). If you have any questions please contact me at 214-915-4807 or my Faculty Sponsor, Dr. Jeff Allen, at 940/565-4918.

Warmest Regards,

Patricia M. Dodd

Dear Participant,

With the cooperation of this institution, and under the supervision of Dr. Jeff Allen (940-565-4918) at the University of North Texas, I am conducting a survey of classroom environments. This study has been reviewed and approved by the UNT Committee for the Protection of Human Subjects (940-565-3940). In order to participate in this study, **you must be at least 18 years old.**

Attached is a 62-item survey and eight demographic questions that will take approximately 20 minutes to complete.

Please Remember:

- Your participation in this study is voluntary.
- All of your information will remain confidential.
- Your individual responses will not be shown to your instructor.
- Please do not sign your name on this instrument.

I realize that your time is valuable, and there are a lot of questions to answer, but your input is extremely valuable. This study was designed to address your needs as a student. Through the use of your honest input, we hope to improve the quality of classroom learning environments, which will benefit you as a student and maximize your classroom learning at this institution.

Instructions for completing the instrument:

- 1) Complete the survey – Approximately 20 minutes.  
Using a #2 pencil, please record your responses for each item on the scantron provided. Please answer all the questions as honestly as possible.
- 2) Return the completed scantron and survey to the student who administered the instrument. To ensure confidentiality, this designated student will place your responses in an envelope, which will be sealed once all the survey responses are collected.

THANK YOU FOR YOUR TIME AND PARTICIPATION!

Patricia M. Dodd

Doctoral Candidate





## The University of Georgia

Doctoral Degree Programs  
Counseling Psychology  
Student Affairs Administration

College of Education  
*Department of Counseling and Human Development Services*

Masters Degree Programs  
College Student Affairs Administration  
Community Counseling  
Rehabilitation Counseling  
School Counseling

March 7, 2002

Ms. Patricia Dodd  
5300 Keller Springs  
#2083  
Dallas, TX 75248


Dear Ms. Dodd:

Enclosed is a copy of the College Classroom Environment Scales (CCES), which was created by myself and some of my doctoral students, a scoring key, and a couple of articles that describe the instrument.

You have permission to use the CCES at no charge. You also have permission to include a copy of the instrument (but not scoring key) in your dissertation.

We do request that you share a copy of your findings once you have completed your dissertation.

Sincerely,



Roger B. Winston, Jr., Ph.D.  
Professor

## College Classroom Environment Scales

Please indicate how frequently each of the following statements are true of this class this term. Consider your responses carefully; respond as you honestly perceive this class, not as you wish it were. Do not spend a great deal of time pondering any particular statement.

Mark your answers (using a number 2 pencil) on the optical scan answer sheet provided. Use the scale below to record your answers. Please do not omit any items.

A = Never or almost never true	C = Occasionally true	E = Always or almost always true
B = Seldom true	D = Often true	

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Other students bring up good points in this class that had never occurred to me.</li> <li>2. The professor is willing to assist students outside of class.</li> <li>3. The professor is not specific about deadlines.</li> <li>4. The professor has set high standards that students must meet in order to get good grades.</li> <li>5. The professor tries to let the class know her or him as a person.</li> <li>6. This class seems to go very fast.</li> <li>7. Students seem to want to show each other up in class.</li> <li>8. The assignments in this class require a substantial amount of time outside of class.</li> <li>9. There are people in this class with whom I would like to be friends.</li> <li>10. On examinations students are called on to take what they read and heard in class and produce original answers or creative solutions.</li> <li>11. Students make contributions in class which makes it a better learning experience for everyone.</li> <li>12. There are firm deadlines when things are due.</li> <li>13. The professor recognizes students by name outside of class.</li> <li>14. The professor follows the syllabus very closely.</li> <li>15. Students often continue to talk about some of the ideas brought out in this class even after it's over.</li> <li>16. It's very clear what students need to do in order to make good grades in this class.</li> <li>17. Students often help each other with assignments or in understanding difficult material.</li> </ol> | <ol style="list-style-type: none"> <li>18. Lectures in this class keep students' interest.</li> <li>19. The professor expects students to be creative in solving problems or satisfying requirements.</li> <li>20. The content of this course is well arranged and logically presented.</li> <li>21. Students feel uncomfortable talking with the professor in this class.</li> <li>22. Students take pride in their work in this class.</li> <li>23. Relationships established among students in this class carry over outside of the classroom.</li> <li>24. Students are enthusiastic about participating in class activities.</li> <li>25. Class expectations are clearly spelled out.</li> <li>26. My presence in this class makes no difference.</li> <li>27. Students work together on assignments and projects for this class.</li> <li>28. Students in this class express opinions or beliefs (related to the course content) that contradict each other.</li> <li>29. Students do not feel comfortable volunteering ideas or opinions in this class.</li> <li>30. To do well in this class a student must be able to think critically.</li> <li>31. Students in this class have gotten to know each other well.</li> <li>32. Students seem eager to leave as soon as the class ends.</li> <li>33. Students take a lot of notes in this class.</li> <li>34. Students get excited about some of the things they learn in this class.</li> </ol> |
|--|---|

35. The professor shows a genuine interest in students' performance in this class.
36. Students in this class treat each other as mature adults.
37. Students are quick to volunteer information or ideas in class.
38. The professor spends time talking informally with students before and/or after class.
39. The professor is impatient when someone says something "stupid" or asks "dumb questions."
40. Students feel comfortable approaching the professor with problems they are having with the class.
41. If students were to miss several classes in succession, they would have a hard time getting caught up.
42. Students' ideas and opinions are appreciated in this class.
43. Students daydream, write letters, or read the newspaper during class.
44. Differing opinions and points of view are encouraged in this class.
45. The guidelines for evaluation in this class have been clearly outlined.
46. The professor embarrasses students who don't know the answers to her or his questions.
47. If students don't stay up with the readings and/or homework, they will be in trouble in this class.
48. Contributions of classmates have added significantly to the course content.
49. The professor is authoritative in his or her presentations.
50. This class requires students to understand and make judgments on issues about which the "experts" disagree.
51. The professor goes out of her or his way to help students who request it.
52. Students show enthusiasm about learning the subject matter of this course.
53. The professor seems to be understanding about students' personal problems and concerns.
54. In order to get good grades in this class it's important to appear to agree with the professor.
55. Students spend time outside of class discussing relevant course topics with classmates.
56. The professor shows respect for students' opinions and points of view.
57. Students participate in lively debates or discussions in this class.
58. Students are encouraged to visit the professor in his or her office.
59. Students in this class are challenged to think for themselves.
60. Assignments in this class leave room to pursue students' personal interests.
61. Students use class discussions or presentations to test some of their own ideas.
62. There are opportunities to contribute during class.
- Background Information and Evaluation**  
PLEASE MARK ANSWERS TO THE FOLLOWING QUESTIONS ON THE LOWER LEFT OF THE ANSWER SHEET UNDER "IDENTIFICATION NUMBER AND SPECIAL CODE"
- A. Which sex are you? (*Select one.*) 0 = Male 1 = Female
- B. What is your current class standing? (*Select one.*)  
0 = Freshman 1 = Sophomore 2 = Junior  
3 = Senior 4 = Other
- C-D. What was your age at your last birthday? (*Enter your age in columns C and D.*)
- E. What is your racial or ethnic background? (*Select one best response.*)  
0 = Black or African American or African  
1 = Hispanic or Mexican American  
2 = White or Caucasian  
3 = Oriental or Asian or Pacific Islander  
4 = Indian or Native People/American  
5 = Any Other  
6 = Decline to respond
- F. How valuable has this course been as part of your total education?  
0 1 2 3 4 5 6 7 8 9  
No Value Great Value
- G. Compared to all the college teachers you have experienced, how effective a teacher has this instructor been?  
0 1 2 3 4 5 6 7 8 9  
Very Worst Very Best
- H. To your best estimation, what is your current overall grade in this course?  
0 = F 1 = D 2 = C 3 = B 4 = A  
5 = Some other grade

**College Classroom Environment Scales**  
 Roger B. Winston, Jr., Mary E. Vahala, Marianne E. Gillis, Edward C. Nichols  
 Form 8.89

1 = Never or almost never true	3 = Occasionally true	5 = Always or almost always true
2 = Seldom true	4 = Often true	

**Cathetic Learning Climate (CLC).** High scores on this scale indicate a charged academic atmosphere that stimulates students to be active participants in the class, to explore links between personal experiences and the subject matter, and to seek classmates' opinions and reactions. Students frequently are given opportunities to test their hypotheses and ideas against those of others through class discussions and cooperative learning experiences. High energy is evident, which is expressed in enthusiasm for learning and exploration of ideas. [19 items]

1. Other students bring up good points in this class which had never occurred to me.
6. This class seems to go very fast
11. Students made contributions in class that made the class a better learning experience for everyone.
15. Students often continue to talk about some of the ideas brought out in this class even after it's over.
18. Lectures in this class keep students' interest.
22. Students take pride in their work.
24. Students are enthusiastic about participating in class activities.
28. Students in this class express opinions or beliefs (related to the course content) that contradict each other.
32. Students seem eager to leave as soon as the class ends. [REVERSE KEY]
34. Students get excited about some of the things they learn in this class.
37. Students are quick to volunteer information or ideas in class.
44. Differing opinions and points of view are encouraged in this class.
48. Contributions of classmates have added significantly to the course content.
50. This class requires students to understand and make judgments on issues about which the "experts" disagree.
52. Students' show enthusiasm about learning the subject matter of this course.
55. Students spend time outside of class discussing relevant course topics with classmates.
57. Students participate in lively debates or discussions in this class.
60. Assignments in this class leave room for students to pursue personal interests.
61. Students use class discussions or presentations to test some of their own ideas.

**Inimical Ambience (IA).** High scores on this scale characterize an environment that students see as being hostile, highly competitive, and rigidly structured. Expectations and evaluation criteria are seen as unclear. Authority is perceived as arbitrary and as exercised in a depersonalizing and aggressive manner. Students are uninvolved in classroom activities, see few viable opportunities to influence the classroom process, and are uncomfortable asking questions or giving opinions. [9 items]

3. The professor is not specific about deadlines.
7. Students seem to want to show each other up in class.
21. Students feel uncomfortable talking with the professor in this class.
26. My presence in this class makes no difference.
29. Students do not feel comfortable volunteering ideas or opinions in this class.
39. The professor is impatient when someone says something "stupid" or asks "dumb questions."
43. Students daydream, write letters, or read the newspaper during class.
46. The professor embarrasses students who don't know the answers to her or his questions.
54. In order to get good grades in this class it's important to appear to agree with the professor.

**Professorial Concern (PC).** High scores on this scale describe an academic environment in which students perceive the instructor as being personally concerned about them as individuals and as striving to foster their educational and personal achievements. The professor is seen as being friendly, caring, and open, as showing empathy in his or her interactions, and as respecting students' ideas. [12 items]

2. The professor is willing to assist students outside of class.
5. The professor tries to let the class know her or him as a person.
13. The professor recognizes students by name outside of class.
35. The professor shows a genuine interest in students' performance in this class.
38. The professor spends time talking informally with students before and/or after class.
40. Students feel comfortable approaching the professor with problems they are having with the class.
42. Students' ideas and opinions are appreciated in this class.
51. The professor goes out of her or his way to help students who request it.
53. The professor seems to be understanding about students' personal problems and concerns.
56. The professor shows respect for students' opinions and points of view.
58. Students are encouraged to visit the professor in his or her office.
62. There are opportunities to contribute in class.



**Academic Rigor [AR].** High scores on this scale are indicative of an environment that is intellectually challenging and demanding. Students perceive a norm of excellence and personal responsibility, which is expressed through high, but realistic, evaluation standards. The class is seen as fast-paced, and there are expectations that students will invest considerable energy and time in completing assignments. [8 items]

- 4. The professor has set high standards that students must meet in order to get good grades.
- 8. The assignments in this class require a substantial amount of time outside of class.
- 10. On examinations students are called on to take what they read and heard in class and produce original answers or creative solutions.
- 19. The professor expects students to be creative in solving problems or satisfying requirements.
- 30. To do well in this class a student must be able to think critically.
- 41. If students were to miss several classes in succession they would have a hard time getting caught up.
- 47. If students don't stay up with the readings and/or homework, they will be in trouble in this class.
- 59. Students in this class are challenged to think for themselves.

**Affiliation [AF].** High scores on this scale describe a class environment that students see as promoting informal interaction and as being highly supportive, friendly, and student-centered. Cooperation and development of mature interpersonal relationships are perceived by students as being valued. [6 items]

- 9. There are people in this class with whom I would like to be friends.
- 17. Students often help each other with assignments or in understanding difficult material.
- 23. Relationships established among students in this class carry over outside of the classroom.
- 27. Students work together on assignments and projects for this class.
- 31. Students in this class have gotten to know each other well.
- 36. Students in this class treat each other as mature adults.

**Structure [ST].** High scores on this scale describe an environment that students perceive as highly structured such that evaluation criteria and study plans are clearly articulated. There is little or no ambiguity about assignments or expectations; the preestablished plan of study is closely followed. The instructor is viewed as the authority in the classroom. [8 items]

- 12. There are firm deadlines when things are due.
- 16. It's very clear what students need to do in order to make good grades in this class.
- 20. The content of this course is well arranged and logically presented.
- 25. Class expectations are clearly spelled out.
- 14. The professor follows the syllabus very closely.
- 33. Students take a lot of notes in this class.
- 45. The guidelines for evaluation in this class have been clearly outlined.
- 49. The professor is authoritative in his or her presentations.

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